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Subchapter 4. Construction Safety Orders

Article 24. Fall Protection

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§1670. Personal Fall Arrest Systems, Personal Fall Restraint Systems and Positioning Devices.

(a) Approved personal fall arrest, personal fall restraint or positioning systems shall be worn by those employees whose work exposes them to falling in excess of 7 1/2 feet from the perimeter of a structure, unprotected sides and edges, leading edges, through shaftways and openings, sloped roof surfaces steeper than 7:12, or other sloped surfaces steeper than 40 degrees not otherwise adequately protected under the provisions of these Orders.

Note: (1) Requirements relating to fall protection for employees working at elevated locations on poles, towers and other structures are provided in Section 2940.6(b) and (c) of the High Voltage Electrical Safety Orders.

(2) Requirements relating to fall protection for employees working on poles, towers, or similar structures are provided in Section 8615(g) of the Telecommunications Safety Orders

(3) Requirements relating to fall protection for employees working in roofing operations are provided in Section 1730 of the Construction Safety Orders.

(b) Personal fall arrest systems and their use shall comply with the provisions set forth below. Effective January 1, 1998, except as permitted in subsections (c) and (d), body belts shall not be used as part of a personal fall arrest system.

(1) On suspended scaffolds or similar work platforms with horizontal lifelines which may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.

(2) Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

- (3) Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.
- (4) Except as provided in Section 1670(b)(5), when vertical lifelines are used, each employee shall be attached to a separate lifeline.
- (5) During the construction of elevator shafts, two employees may be attached to the same lifeline in the hoistway, provided both employees are working atop a false car that is equipped with guardrails; the strength of the lifeline is 10,000 pounds [5,000 pounds per employee attached]; and all other criteria specified in this section for lifelines have been met.
- (6) Lifelines shall be protected against being cut or abraded.
- (7) Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- (8) Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- (9) Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers except for when they are used in conjunction with hot work where the lanyard may be exposed to damage from heat or flame.
- (10) Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:
 - (A) as part of a complete personal fall arrest system which maintains a safety factor of at least two; and
 - (B) under the supervision of a qualified person.
- (11) Personal fall arrest systems, when stopping a fall, shall:
 - (A) limit maximum arresting force on an employee to 1,800 pounds when used with a body harness;
 - (B) be rigged such that an employee can neither free fall more than 6 feet, nor contact any lower level, and, where practicable, the anchor end of the lanyard shall be secured at a level not lower than the employee's waist;
 - (C) bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet; and
 - (D) have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.
- (12) The attachment point of the body belt shall be located in the center of the wearer's back. The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.
- (13) Body belts, harnesses, and components shall be used only for employee protection and not to hoist materials. Body belts used in conjunction with fall restraint systems or positioning devices shall limit the

maximum arresting force on an employee to 900 pounds.

(14) The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

(15) Personal fall arrest systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.

(16) Body belts shall be at least one and five-eighths (1 5/8) inches wide.

(17) Personal fall arrest systems shall not be attached to hoists, except as specified in these Orders, nor shall they be attached to guardrails.

(18) When a personal fall arrest system is used at hoist areas, it shall be rigged to allow the movement of the employee only as far as the edge of the working level or working area.

(19) Each personal fall arrest system shall be inspected not less than twice annually by a competent person in accordance with the manufacturer's recommendations. The date of each inspection shall be documented.

(c) Positioning device systems.

Positioning device systems and their use shall conform to the following provisions:

(1) Positioning devices shall be rigged such that an employee cannot free fall more than 2 feet.

(2) Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.

(3) The use of non-locking snaphooks shall be prohibited after January 1, 1998.

(4) Anchorage points for positioning device systems shall be capable of supporting two times the intended load or 3,000 pounds, whichever is greater.

(d) Personal fall restraint.

(1) Body belts or harnesses may be used for personal fall restraint.

(2) Body belts shall be at least one and five-eighths (1-5/8) inches wide.

(3) Anchorage points used for fall restraint shall be capable of supporting 4 times the intended load.

(4) Restraint protection shall be rigged to allow the movement of employees only as far as the sides of the working level or working area.

(e) Lanyards shall be secured to a substantial member of the structure or to securely rigged lines.

(f) All fall arresting, descent control, and rescue equipment shall be approved as defined in Sections 1504 and 1505 and used in accordance with the manufacturer's recommendations.

(g) If an employee's duties require horizontal movement, rigging shall be provided so that the attached lanyard will slide along with the employee. Such rigging shall be provided for all suspended staging,

outdoor advertising sign platforms, floats, and all other catwalks, or walkways 7 1/2 feet or more above the ground or level beneath.

Note: For additional fall protection requirements during steel erection operations, see Article 29.

(h) Any lanyard, safety belt, harness, dropline, lifeline or other component subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for employee safeguarding.

Note: For the purpose of this subsection, "in-service loading" shall mean loading equivalent to that received in a drop test.

(i) Lifelines and anchorages shall be capable of supporting a minimum dead weight of 5000 pounds.

Exception: Retractable lanyards, controlled descent and rescue devices provided they are approved as defined in Sections 1504 and 1505.

(j) Lifelines subject to excessive fraying or rock damage shall be protected and shall have a wire rope center. Seriously worn or damaged rope shall be promptly removed from service.

(k) All safety belts, harnesses and lanyards placed in service or purchased on or before February 1, 1997, shall be labeled as meeting the requirements contained in ANSI A10.14-1975, Requirements for Safety Belts, Harnesses, Lanyards, Lifelines and Drop Lines for Construction and Industrial Use or be in compliance with the requirement stated in Subsection (l).

(l) All personal fall arrest, personal fall restraint and positioning device systems purchased or placed in service after February 1, 1997, shall be labeled as meeting the requirements contained in ANSI A10.14-1991 American National Standard for Construction and Demolition Use, or ANSI Z359.1-1992 American National Standard Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.

NOTE

Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. New subsections (d)-(h) filed 5-21-75; effective thirtieth day thereafter (Register 75, No. 21).
2. Amendment filed 11-14-75; effective thirtieth day thereafter (Register 75, No. 46).
3. Amendment filed 6-2-87; operative 7-2-87 (Register 87, No. 24).
4. Change without regulatory effect amending subsection (c) filed 3-26-93; operative 4-26-93 pursuant to section 100, title 1, California Code of Regulations (Register 93, No. 13).
5. Amendment of section heading and subsection (a), new subsections (b)-(d)(4), subsection relettering, and amendment of newly designated subsections (j), (k) and (l), and new subsection (m) filed 7-30-97; operative 8-29-97 (Register 97, No. 31).

6. Change without regulatory effect amending subsections (i), (j) and (l) filed 1-6-98 pursuant to section 100, title 1, California Code of Regulations (Register 98, No. 2).
7. Amendment filed 11-21-2000; operative 12-21-2000 (Register 2000, No. 47).
8. Change without regulatory effect renumbering former subsections (c)(4) and (c)(5) to subsections (c)(3) and (c)(4) filed 1-17-2000 pursuant to section 100, title 1, California Code of Regulations (Register 2001, No. 3).
9. Change without regulatory effect renumbering former subsection (b)(20) to subsection (b)(19) filed 2-13-2001 pursuant to section 100, title 1, California Code of Regulations (Register 2001, No. 7).
10. Amendment of subsection (b)(11)(B) filed 6-15-2005; operative 7-15-2005 (Register 2005, No. 24).

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